



UW Study-3: CLARREO Payload Requirements and Systems Study

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Motivation

- While a big focus of the CLARREO Phase-A Study will involve Payload Requirements and Systems Design, it is important at this stage to better define the scale of the resources required for pursuing this mission.
- This information will be used in top-level mission trade studies.



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Payload Requirements and Systems Study



Payload Requirements and Systems Study (1)

- Document a flow-down to instrument, and spacecraft requirements in a requirements traceability matrix.
- Refine system and subsystem-level block diagrams and define key interfaces.
- Define preliminary concepts for all electrical subsystems.
- Refine the preliminary instrument concept layout, including: dual interferometer implementation, fore and aft-optics designs, scene select mirror assembly, detector and cooler implementation; and including accommodation of the instrument calibration blackbodies, space views, and On-orbit Absolute Radiance Standard (OARS).



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Payload Requirements and Systems Study (2)

- Refine mass and power budgets with appropriate margins for the instrument payload and spacecraft.
- Develop preliminary instrument performance and calibration models.
- Develop a spacecraft radiator coupling concept for the OARS.
- Perform a study to identify risks and plans for mitigation, highlighting redundancy tradeoffs.
- Develop a project implementation plan, including cost and schedule.



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